

Claims:

1. Apparatus for wirelessly communicating with a mobile telephone network, the apparatus comprising;
- 5                   a first unit having a power supply, a radio transceiver with an antenna for communicating with the mobile telephone network over a network traffic channel, and first local wireless communication means;
- 10                  and
- a second unit having data processing means and second local wireless communication means arranged to communicate over a local traffic channel with said first local wireless communication means to transfer data between the data processing means and said radio transceiver,
- 15                  wherein in use said local traffic channel is determined by said network traffic channel.
- 20                2. Apparatus according to claim 1, wherein said local traffic channel is tied to said network traffic channel.
3. Apparatus according to claim 1, wherein in use said local traffic channel is identified to the apparatus by a message transmitted via said network traffic channel.
- 25                4. Apparatus according to any one of the preceding claims, and comprising a plurality of said second units which provide respective different user functions.
- 30                5. Apparatus according to claim 4, wherein in use the local traffic channels of the second units are different from one another, but are all tied to said network traffic channel.
- 35                6. Apparatus according to any one of the preceding claims, wherein said network traffic channel and said local traffic channel(s) differ in the time and/or the frequency domain.

7. Apparatus according to any one of the preceding claims, wherein said first unit does not have a radio telephone user interface.

5 8. Apparatus according to any one of the preceding claims, wherein said first unit has a radio telephone user interface.

9. Apparatus according to claim 4, wherein at least one of said second units comprises means for answering a telephone call received by said first unit and a second of said units comprises an earphone and a  
10 microphone coupled to the data processing means thereof.

10. Apparatus according to any one of the preceding claims, wherein the second unit, or one of the second units, comprises a measuring device for measuring a physical parameter, said measuring device  
15 being coupled to the data processing means thereof whereby a measured parameter can be transmitted to the radio transceiver of the first unit.

11. Apparatus according to claim 10, wherein said measuring device is  
20 arranged to measure the glucose level in a blood sample.

12. Apparatus according to any one of the preceding claims, wherein said local traffic channel is a radio traffic channel.

25 13. A radio telephone (1) comprising at least a power supply (65), radio part (4), antenna (5) of the radio part, and a user interface having at least one microphone (9, 14), at least one earpiece (8, 13), means (6, 66) for making a call and means (15) for answering a call, **characterized** in that the radio telephone (1) is divided at least into a  
30 first part (2) and a second part (3), the first part (2) comprising at least the power supply (65), radio part (4), antenna (5) of the radio part, and means (21, 28) for communicating on a first link communication (LINK1) with the second part (3), the second part (3) comprising at least the means (15) for answering a call, and means (33, 39) for communicating with the first part (2).  
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14. A radio telephone (1) as set forth in claim 13, **characterized** in that it is divided into a first part (2), a second part (3) and a third part (45),

that a user interface (6, 8, 9, 15) is positioned to the first part (2), that the second part (3) further comprises means (46, 47) for communicating with the third part (45), and that a supplementary earpiece (13) and a supplementary microphone (14) are positioned to the third part (45) which further comprises means (70, 73) for communicating with the second part (3).

15. A radio telephone (1) as set forth in claim 13, **characterized** in that it is divided into a first part (2), a second part (3) and a third part (45), and that means (66) for making a call and means (15) for answering a call are positioned to the second part (3), which further comprises means (46, 47) for communicating with the third part, and that a supplementary earpiece (13) and a supplementary microphone (14) are placed to the third part (45) which further comprises means (70, 73) for communicating with the second part (3).

16. A radio telephone (1) as set forth in any of the claims 13 to 15, **characterized** in that at least means (24, 28) of the first part for communicating on the first link communication (LINK1) with the second part (3), and means (33, 39) of the second part for communicating with the first part (2) are arranged to be occasionally switched on in order to lower power consumption.

17. A radio telephone (1) as set forth in any of the claims 13 to 16, **characterized** in that the first link communication (LINK1) between the first (2) and second (3) part is a bi-directional radio communication, wherein the signals transferred from the first part (2) to the second part (3) are arranged to be transmitted on a transmission frequency band (uplink), and the signals transferred from the second part (3) to the first part (2) are arranged to be transmitted on a reception frequency band (downlink), wherein each transmission frequency and reception frequency used are preferably situated at a constant distance from each other (duplex separation).

18. A radio telephone (1) as set forth in claim 17, **characterized** in that data transfer in the first link communication (LINK1) is arranged to be performed as frequency modulated signals, wherein the first part (2) comprises a link module (10) having a transmitter (28) for transmission

of signals transferred from the first part (2) to the second part (3), and a receiver (21) for reception of signals transferred from the second part (3) to the first part (2), and the second part (3) comprising a transmitter (39) for transmission of signals transferred from the second part (3) to the first part (2), and a receiver (33) for reception of signals transferred from the first part (2) to the second part (3).

19. A radio telephone (1) as set forth in claims 17 or 18, **characterized** in that

- a transmitter (28) of the link module and a transmitter (39) of the second part are arranged to be switched on only during the call, and
- a receiver (21) of the link module and a receiver (33) of the second part are arranged to be switched on periodically in order to check whether there exists messages in the first link communication (LINK1), and during a call.

20. A radio telephone (1) as set forth in claim 18, **characterized** in that the link module (10) comprises means (20, 21, 27, 28, D1) for selecting the transmission and reception frequency used in each separate case in the first link communication (LINK1).

21. A radio telephone (1) as set forth in claim 20, **characterized** in that the selection of the carrier frequency used in each separate case in the first link communication (LINK1) is arranged to be carried out by scanning the reception frequency band selected for the first link communication in the receiver of the link module, and by examining the output signal of the receiver during the scan in order to clarify the message-free carrier frequency.

22. A radio telephone (1) as set forth in claim 20, **characterized** in that the selection of transmission and reception frequency used in each separate case in the first link communication (LINK1) is arranged to be carried out by adjusting a local oscillator (20) of the link module according to the frequency set to a local oscillator (51) of the radio part.

23. A radio telephone (1) as set forth in claim 22, **characterized** in that the difference of the frequency of the local oscillator (20) of the link

module and the frequency of the local oscillator (51) of the radio part is constant.

5 24. A radio telephone (1) as set forth in claim 20, wherein one or several traffic channels are arranged to be used in the communication, **characterized** in that a link channel corresponding to each traffic channel or specific channel group is arranged to the link communications (LINK1, LINK2, LINK3).

10 25. A radio telephone (1) as set forth in claim 22, **characterized** in that it is a digital telephone in which, in communication in traffic channel, a time division (TDMA) is arranged to be used, wherein in each traffic channel different time slots are arranged to be used, and that time division is arranged to be used in link channels, wherein different time slot is arranged to be used in each link channel.

15 26. A radio telephone (1) as set forth in claim 24, **characterized** in that spread spectrum communication is arranged to be used on link channels, wherein an individual pseudorandom binary sequence is arranged for each link channel.

20 27. A radio telephone (1) as set forth in claim 24, **characterized** in that frequency hopping is arranged to be used in the link channels, wherein an individual hopping sequence is arranged for each link channel.

25 28. A radio telephone (1) as set forth in claims 14 or 15, **characterized** in that the difference of the transmission frequencies (uplink) used in the first (LINK1) and second (LINK2) link communications at a time is constant.

30 29. A radio telephone (1) as set forth in claim 14 or 15, **characterized** in that audio signals are arranged to be transferred directly between the first (2) and third (45) part, wherein the first part further comprises a transmitter/receiver for communication with the third part, and the third part further comprises a transmitter/receiver for communication with the first part.

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30. A radio telephone (1) as set forth in any of the preceding claims, **characterized** in that at least an auxiliary earphone (13) and an auxiliary microphone (14) are placed in connection with spectacles (79).

- 5 31. A radio telephone (1) as set forth in any of the preceding claims, **characterized** in that identification of the second part (3) of the radio  
10 telephone is arranged to take place by transmitting a password from the first part (2) to the second part (3) with means (34) for examining the password, and that the password is the equipment identification (IMEI) of the radio telephone.

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